Naval Air Station, Fallon

Work Plan for Investigation of Active Sites

Remedial Project Managers Meeting
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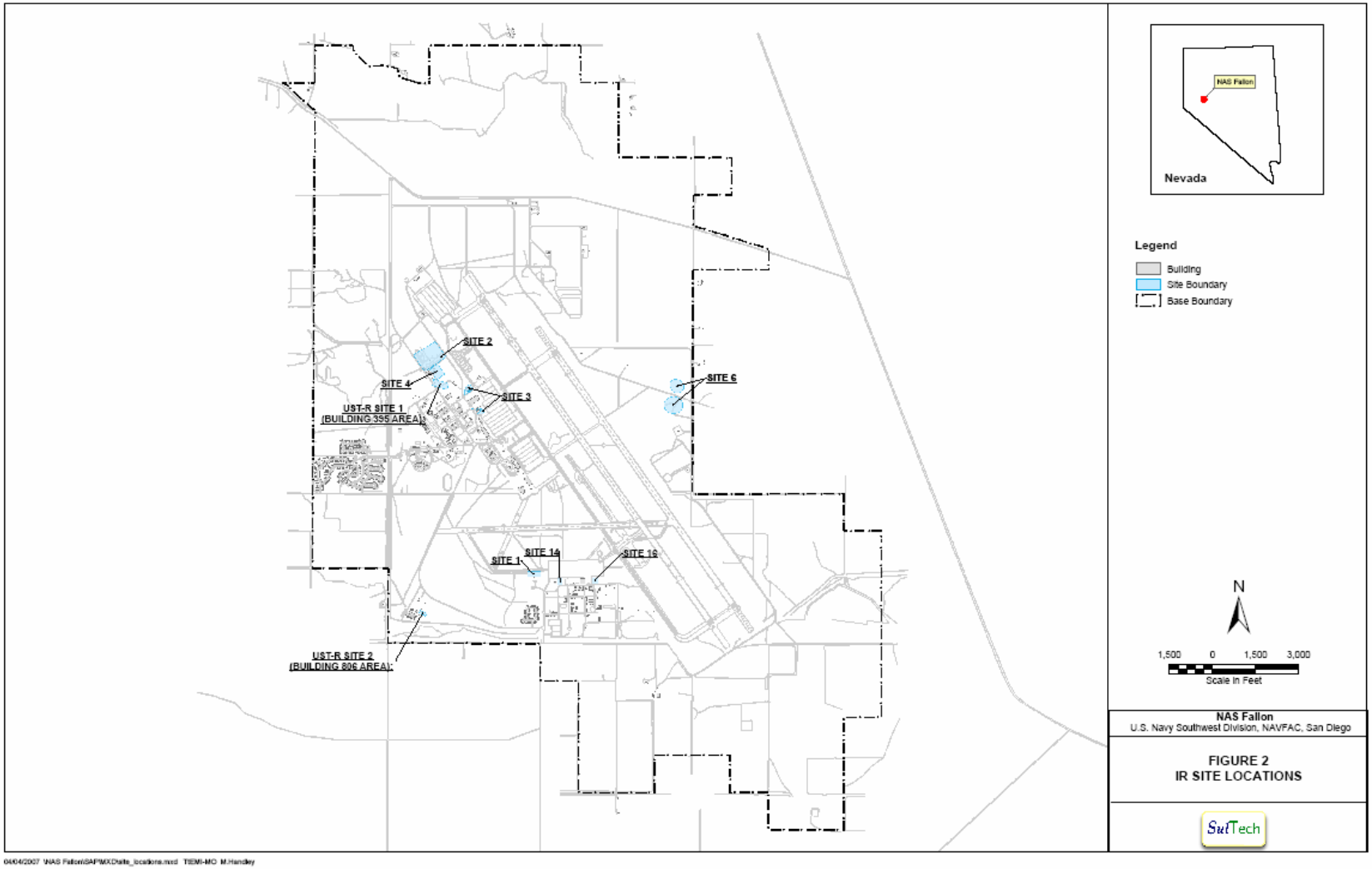
Location of Sites to be Investigated



Sites to be Investigated

- **Site 1 – Crash Crew Training Area**
  - ✓Burn pit, aboveground storage tanks (ASTs), pipeline (all removed)
  - ✓Contaminated soil and floating product, fuel and solvent contamination
  - ✓Several hundred cubic yards of contaminated soil has been removed
  - ✓Bioslurper pilot study from 1996 to 1998 removed 900 gallons of product
- **Site 2/4 – New Fuel Farm/Transportation Yard**
  - ✓Old fuel tanks have been filled with slurry
  - ✓Significant floating product at the site
  - ✓Soil removed at Site 4
  - ✓Groundwater affected by Site 2
  - ✓Pilot studies completed
  - ✓Residual vadose zone soil contamination remains in pockets at Site 2

Sites to be Investigated

- **Site 3 – Hangar 1 Area**
  - ✓Multiple sources of contamination, both fuel and solvent
  - ✓Groundwater contamination is the primary issue
- **Site 6 – Defuel Disposal Area**
  - ✓Off-specification fuel discharged to ground surface
  - ✓Two areas; only one appears to have been used for disposal
  - ✓Residual vadose zone contamination still present in central disposal area
- **Site 14 – Old Vehicle Maintenance Shop**
  - ✓Vehicle maintenance and hobby shop
  - ✓Floating fuel product and some solvents
  - ✓Residual vadose zone soil contamination

Sites to be Investigated

- **Site 16 – Old Fuel Farm**
  - ✓Four underground storage tanks (USTs) demolished
  - ✓Potential new source of solvent contamination identified
  - ✓Potential new source of fuel contamination identified through SCAPS
  - ✓Significant product contamination (mostly residual)
  - ✓Concerns about impacts to nearby drain
- **UST-R Site 1 (395)**
  - ✓Two USTs removed
  - ✓Floating fuel product identified
- **UST-R Site 2 (800 Complex)**
  - ✓Numerous USTs and ASTs removed
  - ✓Contamination detected in soil and water
  - ✓Monitoring wells previously located at this site were plugged

Summary of Previous Investigations

- Remedial Investigation completed for IR sites, 1994
- Engineering Evaluation and Cost Analysis (EE/CA) completed for many IR sites, 1995 and 1996
- Sampling during tank removal programs, 1992, 1995, and 1996
- Additional sampling in support of remedial design and remediation alternatives (bioslurping system, Site 1 soil removal)
- Sampling conducted for intrinsic remediation study, 2002
- Additional base investigations/LUST investigations

Primary Documents used for Planning Additional Investigation

- Remedial Investigation, Oak Ridge National Laboratory, 1994
- Trend Analysis and Updated Plume Assessment, Battelle, 2003
- Data Summary and Recommendations Report, Battelle, 2003
  - ✓Report includes summary of intrinsic remediation sampling, EE/CAs, LUST program sampling, etc.
- UST removal reports, including PRC 1993, IT 1995, WESTEX 1996

Tasks Completed for Work Plan
(Results Presented in the Work Plan)

- **Passive soil gas sampling, September 2006**
  - ✓Site 6, northern disposal area (no sources identified)
  - ✓Site 16, solvent source near well MW-16-3 (localized solvent source identified)

- **Tier 1 human health evaluation (soil), February 2007**
  - ✓Previous soil data adequate for most sites, potential risks identified at Sites 1, 14, and UST-R Site 2 (800 Complex)
  - ✓Residual vadose zone contamination (TPH) not evaluated as part of risk assessment, some areas with concentrations above Nevada screening criteria

- **Ecological habitat survey, February 2007**
  - ✓Viable habitat only identified at Sites 1, 2 (portions), 6, 16, and UST-R Site 2 (800 Complex)

- **SCAPS Investigation, February 2007**
  - ✓Areas of product/smear zone identified, as well as potential new source at Site 16

Overall Goal

- **Minimize additional investigations**
  - ✓**Focus on recommendations from previous investigations**
  - ✓**Utilize new information from SCAPS**
    - Sites 1, 2, 4, 14, 16, UST-R Site 1 (395), and UST-R Site 2 (800 Complex)
    - Soil smear zones, floating product information
  - ✓**Standardize sampling locations and methods (groundwater)**
- **Perform judgmental sampling with field step-out criteria**
  - ✓**Allow for additional soil sampling based on:**
    - Visual observations
    - PID headspace readings
- **Provide strategy for accelerated cleanup and site closure**
  - ✓**Additional information from SCAPS investigation**
    - Fuel fingerprinting
    - Temporary wells - is product recoverable?

Investigation Objectives

- **Collect additional soil data**
  - ✓**Confirm results of SCAPS LIF response at critical areas**
  - ✓**Fill data gaps left over from SCAPS investigation**
  - ✓**Delineate potential soil smear zones**
  - ✓**Delineate surface soil and vadose zone contamination identified during previous investigations**
  - ✓**Evaluate potential risk to ecological receptors**
  - ✓**Update human heath risk assessment**
  - ✓**Delineate areas for potential removal or remedial action**
  - ✓**Samples to be analyzed for TPH, VOCs, and PAHs (SIM Method)**
    - Selected samples also analyzed for geotechnical parameters for remedial design, soil vapor to indoor air modeling

Investigation Objectives

- **Collect additional groundwater data**
  - ✓**Update groundwater database using standardized methods and monitoring wells that comply with Nevada Revised Statutes 2005 Chapter 534**
  - ✓**Evaluate potential human health risks from groundwater and vapor intrusion**
  - ✓**Install new wells**
    - Wells needed to fill data gaps (previous sampling, SCAPS, soil gas results, Site 16 drain concerns)
    - Wells needed to replace existing, poor-quality wells
    - Additional sentry wells at Site 6
  - ✓**Focus on dissolved phase**
    - Plume stability
    - Trends in concentrations
  - ✓**Samples to be analyzed for TPH, VOCs, PAHs (SIM Method), and TDS**
    - Selected samples also analyzed for MNA parameters

Investigation Objectives

- **Install Groundwater Velocity Sensors**
  - ✓**Site 16**
  - ✓**Site 6 (if possible)**
- **Redevelop existing wells if needed prior to sample collection**
- **Survey all new locations**
- **Confirm old well locations**

Summary of Planned Investigation

- **Investigation planned for two 10 day rotations**
  - **Surface soil samples – 45**
  - **Subsurface soil samples – 71**
  - **New Monitoring wells – 25**
  - **Groundwater samples – 110**

- **Provision made for a second limited mobilization after review of initial data to fill any data gaps, if needed.**

Results of Additional Investigation

- Summarize all results in RI addendum report
- Provide recommendations for removal/remedial actions
- Provide recommendations for regulatory framework to cover each site

Schedule

- Submit draft plan for state review: May 2007
- Submit final plan: June 2007
- Conduct field effort: July-August 2007
- Submit draft RI Addendum report: November 2007